

Porphyry Deposits of the Canadian Cordillera

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Book Reviews

Porphyry Deposits of the Canadian Cordillera

Edited by A. Sutherland Brown
Canadian Institute of Mining and Metallurgy Special Volume 15,
510 pages, 1976.
\$15 00

Reviewed by J. M. Allan
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200 Granville Square
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Production from porphyry deposits in the Canadian Cordillera has been and will continue to be an important part of the Canadian metal industry. Until now there has been no single reference which adequately described these deposits. This volume fills this need admirably. All of the important deposits and prospects in the Cordillera are described in a consistent and logical way that makes comparison simple. The dedication to Charles S. Ney is entirely appropriate for he was associated with the discovery of some of the prospects described.

The book is divided into five sections. Section A deals with general characteristics and settings of Cordilleran porphyries, providing a framework for the description of individual deposits which follows in parts B, C, and D. Part B deals with porphyry deposits of the calc-alkaline suite, e.g., Bethlehem, Lornex, Valley Copper, in which molybdenum may be an important constituent as well as copper. Part C deals with deposits of the alkaline suite, e.g., Copper Mountain, Afton, Galore Creek, in which gold rather than Mo is the coproduct. Section D describes porphyry molybdenum deposits, e.g., Endako, Boss Mountain, Glacier Gulch,

in which Mo is the only significant metal. Part D is a review of recent developments relating to the genesis, localization and emplacement of porphyry deposits. A geological map of the Cordillera is included as well as an overlay showing faults, porphyry deposits and showings, and tectonic belts. Two tables listing pertinent characteristics of the Cordilleran deposits are also included.

The literature on porphyries is extensive but the bulk of it deals with the American and South American deposits. Perusal of this volume shows that Cordilleran deposits are in many ways similar, e.g., alteration facies, mineralogy, host rocks, but also that there are significant differences. Deposits in Highland Valley for example are centrally located within a batholith, a mode of occurrence that is rare elsewhere. The alkaline suite porphyries are also a rarity in other parts of the world and perhaps they are genetically different. Other differences include a generally lower copper grade, i.e., 0.5 Cu vs. 0.6-0.7, the lack of an enriched zone in the Cordilleran porphyries (even Afton which is in large part supergene ore is not enriched), the frequency of relatively old (200 Ma) deposits and the dominant structural control of mineralization. These differences as well as the many similarities, the wealth of data presented and the consistent format adopted make it easy for the reader to make many and useful comparisons.

The topics discussed include all of the current methods of porphyry evaluation, e.g., isotope studies, fluid inclusion work, and show that the study of porphyries in the Cordillera is as advanced as it is anywhere. Classification of porphyries is also at an advanced stage, particularly so when one sees that the phallic porphyry model of Sutherland Brown has in this volume been mated with the

vaginal alteration model of Lowell and Guilbert.

The editors of this volume are to be congratulated for providing a well organized thorough description of Cordilleran porphyries. It is a must for anyone interested in porphyries and is a real bargain as well.

MS received June 2, 1977

World Mineral Supplies Assessment and Perspective

Edited by G. J. S. Govett and M. H. Govett
Elsevier Scientific Publishing Company,
472 p., 1976.
Dfl. 90.00 (U.S. \$34.75).

Reviewed by J. V. Guy-Bray
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This third book in Elsevier's "Developments in Economic Geology" series assembles contributions by government and university authors chosen by the Govetts to provide "a sober appraisal of the problems of, and possible solutions to, the present mineral resource situation." It addresses "those who are presently trying to arrive at reserve and resource estimates . . . to frame national or international policy toward resource development".

By the very nature of the mineral industry, outlined in A. L. McAllister's excellent chapter, resource data are always obsolescent and therefore hazardous to extrapolate into the future, as the confusion of the "Limits to Growth" debate showed. For the short term, however, the first part of the book